

**Water Financing Partnership Facility
 RETA 6498: Knowledge and Innovation Support for ADB's Water
 Financing Program**

Pilot Demonstration Activity

Activity Title: Demonstrating and Piloting the Use of Bamboo for Land Stabilization, Soil Erosion Control, Water Catchment Rehabilitation and Effluent Treatment in Citarum River Basin	
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Request Date: August 2008	
Country (DMC): Indonesia	Region: Southeast Asia Regional Department
Activity Proposed Start Date: September 2008	Activity Proposed Duration: 10 Months
Cost Estimate: USD 50,000	
Implementing Organization Contact: D.Sunardhi Yogantara	
Consultant Identified? Yes	If so, Consultant(s) Contact:
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Short Description:

1. Background and Rationale:

The massive annual erosion rate in Citarum watershed areas has for long been the environmental issue that from time to time contributes to the degradation of Citarum river's condition. Despite some efforts that have been planned and few that have been implemented through relevant institutions, the erosion rate remains at an alarming level

Bamboo has been a common plant in many locations in Citarum river basin, its economic value has always been promising though indigenous knowledge in preserving bamboo for water conservation and land stabilization, as well as effluent treatment still needs to be enhanced. Furthermore, community participation is seen as a crucial element that needs to be encouraged and enhanced as the basis of any effort in reducing soil erosion rate and land stabilization in any land-slide-prone locations as well as preserving water spring. For such purpose, integrating the future economic benefits for the involved communities should be considered when introducing and selecting certain plants and or vegetation.

The findings from this PDA, with respect to the use of bamboo for land stabilization, soil erosion control and effluent treatment, as well as the value of getting communities involved and providing them opportunity for improved livelihood will feed into the MFF for Citarum currently under preparation.

This PDA is also expected to complement another PDA which is trying to introduce the use of vetiver system for the same purpose. Vetiver and bamboo have their specific characteristics appropriate for certain locations and will be complementing each other in comprehensively addressing soil stabilization, erosion control and effluent cleaning.

Scaling up of these systems is provided for under the recently approved \$921 million MFF for Integrated Citarum Water Resources Management Investment Program.

2. Objectives:

The main objective of this PDA is to demonstrate and pilot test the use of bamboo for addressing the massive soil erosion and water catchment degradation in Citarum river basin, as well as assessing further its potential for effluent cleaning. Specifically, the PDA aims to:

2.1. enhance awareness and knowledge of local community on bamboo cultivation for land stabilization and conservation of water catchments, as well as effluent treatment.

2.2. catalyze and ignite a wider community action in water catchments conservation and soil erosion control.

2.3. demonstrate a model for supporting alternative livelihoods such as bamboo cultivation when addressing water resources management challenges such as land stabilization, erosion control and water conservation.

3. Location and Scope of Work / Description of Activities:

The PDA will be implemented in Citarum river basin where land stabilization, erosion control and water catchment rehabilitation need to be urgently addressed.

The PDA will assist the community in assessing the problems and getting them to recognize their role in stabilizing their farming land, reducing soil erosion and preserving water. This will be conducted in a package of participatory processes which will be specifically designed for watershed community.

Bamboo will be introduced as the appropriate plant to be cultivated, the implementation of which will be customized to suit specific contour, soil structure and the like. Design of the planting and cultivation will also be based on GIS and will conform with the principle of zoning pattern. As supplementary plant, vetiver grass will gradually be applied as buffer plants to be planted on certain slopes. Certain variety of bamboo will be defined by considering its function, suitability with local climate, altitude, soil structure and most importantly with its economic benefits and value. Livelihood program scheme through e.g. training on bamboo utility, preservation technique and possible craft making of bamboo will be a vital indispensable part of the project. In the end, the implementation of pilot land stabilization, soil erosion control and water catchments conservation will become a model of community driven development where participation of concerned community is encouraged, facilitated and enhanced at first.

The key activities are envisioned as follows:

Identification, Definition and Selection of Project Location

- Implementing Team Formation
- Field Survey and Identification of Project Location
- Selection & Definition of Project Locations
- Project Socialization

Community Preparation, Sustainable Livelihood Assessment (SLA) and community preparation through application of 'Field School for Watershed areas'

- Identification and selection of participants (from concerned communities)
- Implementation of Field School Practice:
 - a. Learning Contract
 - b. Watershed Concept
 - c. Watershed Participatory Mapping.
 - d. Trend Analysis
 - e. Transect of Watershed

- f. Seasons Analysis
- g. Institutional Analysis
- h. Bamboo Bridge
- Participatory Planning for Action.

Implementation of Bamboo Cultivation

- Training Bamboo & Vetiver Planting & Cultivation
- Planting Pattern Plan.
- Field Preparation and Planting.

Monitoring & Evaluation

- Maintenance & Monitoring

Facilitation for Livelihood Program., Trainings and Study Trip for Bamboo Crafts Skill/Vocation

- Workshop & Dissemination.
- Monitoring & Evaluation.

3.Expected Outputs

3.1. Plan and design of soil erosion control and land stabilization as well as water conservation by zoning system for certain Citarum river basin location.

3.2. Long Term Community Action Plan in tackling the problems of soil erosion and watershed degradation in Citarum River Basin.

3.3. Established pilot bamboo planting projects and nurseries for land stabilization and erosion control.

3.5. Formation of a bamboo community group who will be responsible for maintaining the planted bamboo and the whole selected location in term of land stabilization and or erosion reduction as well as water spring recovery/water preservation. The group will also be responsible to do monitoring and evaluation of the growth of bamboo and its impact.

3.6. Well established community who are competent in implementing bamboo cultivation without further supervision in their own land and of training other community stakeholder groups in all the processes they have learnt and undertaken.

4. Implementation Methodology & Approach

As community engagement and participation will be sought as basic to success of the project, the project will apply a mixed-participatory approach and methodology such as PRA (participatory rural appraisal combined with the Project Objective-Oriented approach. Community preparation which will be the soft intervention will be the fundamental part of the project.

5. Workplan/Implementation Schedule

The implementation schedule is shown below. A total of ten (10) months will be required to prepare and implement this pilot project to the stage that the local communities and stakeholder groups can continue the project with limited or no supervision. (attachement).

6. Dissemination & Scaling Up

Dissemination of the result of this pilot demonstration activity will be conducted through a number of workshops and field trip which will involve concerned parties and communities including CBO, media and relevant academicians as well as local government. It is envisioned that the PDA could be replicated in other parts of Citarum as well as in other places in Indonesia which are similarly situated.

7. Technical Assistance.

To ensure the success of the project the implementer will closely consult and collaborate with bamboo cultivation specialist from Institut Pertanian Bogor – IPB and wellknown bamboo lover and artists Anang Sumarna from ITB and local bamboo practitioner Ir.Lili Djadjuli MT. They will be mainly engaged in the design of cultivation and several trainings for the concerned communities.

8. Stakeholders Participation & Co-related Programs

As a pilot project which success will expectedly attract further replication by any other relevant stakeholders in the future, the project implementer will closely, appropriately work with concerned stakeholders in Citarum River Basin such as with BBWS, Balai PSDA Wilayah Sungai Citarum, BPLHD (Environmental Protection Agency of West Java), Dinas Kehutanan (West Java Forest Management Agency) , Perhutani, and a number of community groups and NGO who have interests and /or have been working - in similar field of works. For that purpose the project implementer will also work on communication strategy to liaise with concerned stakeholders. A regular stakeholders meeting will be tried to be set up as a media to involve stakeholders from very early stage of activities, its process of planning, implementation and monitoring and evaluation.

Through a stakeholder meeting and adequate co-ordination, the implementer expects to identify and find co-related programs and will seek a synergy with other programs planned and implemented by other parties. Thus a 'blue thread' of Citarum Watershed recovery activities will therefore be envisaged and enhanced. However, by applying a model of participatory assessment such as the field school, it is hoped that such approach and methodology could be replicated and up-scaled as a tool to build up and strengthen community participation in broader locations in Citarum river basin.

9.Costs Estimate

See attached

Cost Estimates

Items	Unit	Quantity	Unit Cost	TOTAL US\$	Remarks
Consultant services and related expenses				26,600	
Baseline survey	1 time	1	800	800	
Remuneration Project Coordinator	man-month	12	800.0	9,600	
Remuneration Facilitator	man-month	24	550.0	13,200	2 facilitator for 2 location
Remuneration Local Researcher/community orga	man month	24	100	2,400	1 person at each location
Stakeholder coordination & meetings	Lumpsum	3	200	600	
Equipment and other office supplies, office rental				17,080	
Bamboo sooth supply	piece	7500	1.6	12,000	a different variety to be used
Vetiver slip supply	slip	15000	0	3,000	
Office supplies	LS	12	40	480	
Communication & Transport	lumpsum	12	30	600	
Land Preparation/Earthwork, Observation & Maintenance	LS/location	2	500	1,000	2 project locations
Conferences, workshops, survey, campaigns			Sub-Total:	6,130	
Participatory Training :Sustainable Livelihood Assesment	18 session	30	59.0	1,770	30 participants from 2 sites
Training on bamboo culture technique & group management	3 session	30	32.0	960	30 participants from 2 sites
Study trip to a successful bamboo site	LS	40	35	1,400	40 participants from 2 sites
Workshop for dissemination of project & its result	2 times	50	40	2,000	50 participants of multystakeholder
Grand Total (1+2+3)				49,810	